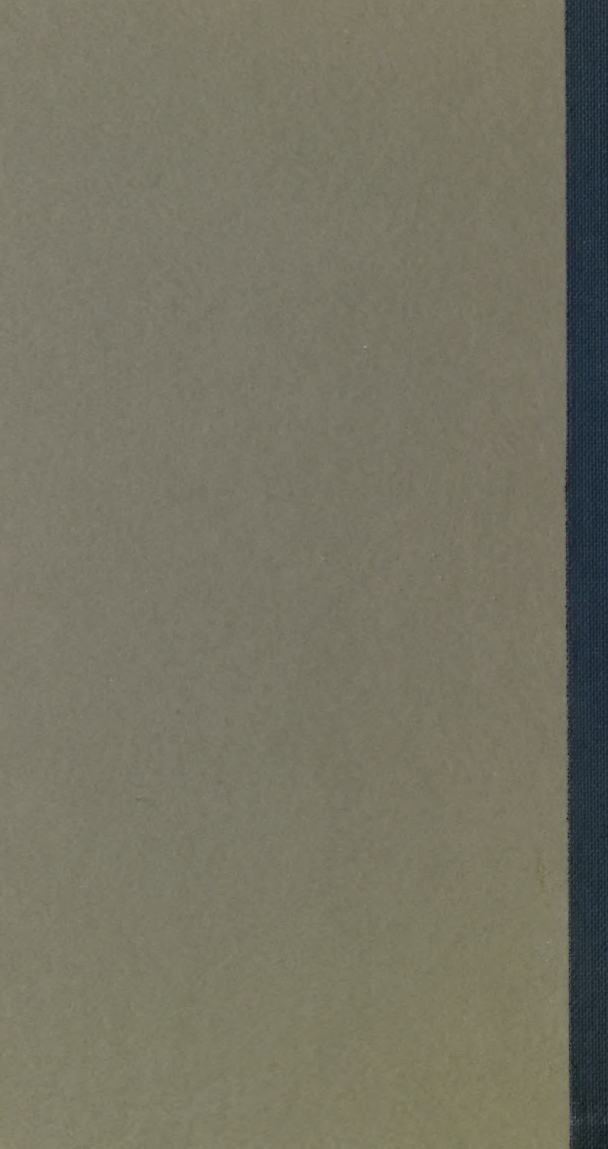


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INDIAN NOTES
AND MONOGRAPHS

EDITED BY F. W. HODGE



A SERIES OF PUBLICA-
TIONS RELATING TO THE
AMERICAN ABORIGINES

ADDITIONAL MOUNDS OF DUVAL
AND OF CLAY COUNTIES,
FLORIDA

MOUND INVESTIGATION ON THE EAST
COAST OF FLORIDA

CERTAIN FLORIDA COAST MOUNDS
NORTH OF THE ST. JOHNS RIVER

BY
CLARENCE B. MOORE

1896

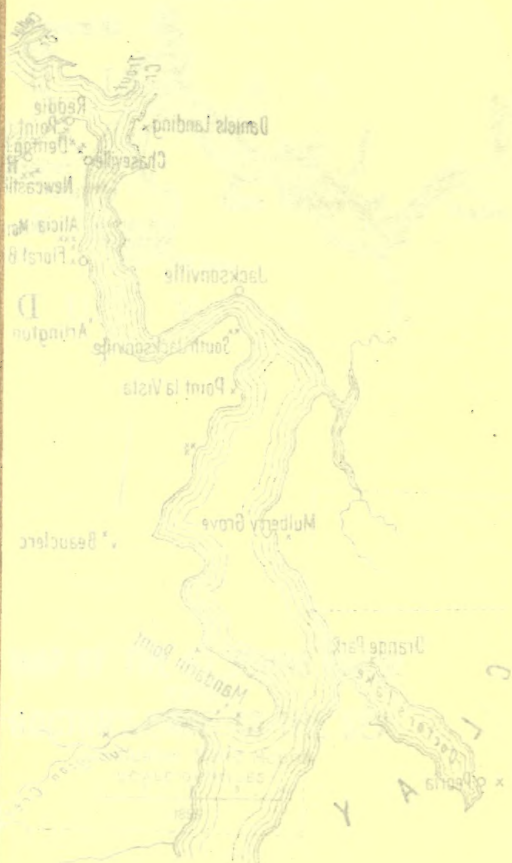
NEW YORK

MUSEUM OF THE AMERICAN INDIAN
HEYE FOUNDATION

1922

THIS series of INDIAN NOTES AND MONOGRAPHS is devoted primarily to the publication of the result of studies by members of the staff of the Museum of the American Indian, Heye Foundation, and is uniform with HISPANIC NOTES AND MONOGRAPHS, published by the Hispanic Society of America, with which organization this Museum is in cordial coöperation.

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AND MONOGRAPHS

PREFACE

During five months of the Fall of 1895 and of the Winter of 1895-1896, mound investigation was carried on by us in Florida with cumulative results in some cases, with negative results in others.

Nothing new or of special interest rewarded our labors.

Nevertheless, as our researches were made with great care and considerable thoroughness, it has seemed well to embody the results in a brief report. To our mind, it is the duty of one destroying an aboriginal landmark to see to it that the results, be they ever so meagre, go on permanent record.

C. B. M.

June, 1896.

ADDITIONAL MOUNDS OF DUVAL
AND OF CLAY COUNTIES,
FLORIDA

Mound at Arlington.

Mounds at South Jacksonville (2).

Mound at Point La Vista.

Mounds South of Point La Vista (3).

Mound at Mulberry Grove.

Mound at Peoria.

LOW MOUND AT ARLINGTON, DUVAL
COUNTY

About three miles below Jacksonville, on the opposite side of the St. Johns, at Arlington, on the property of William G. Matthews, Esq., of Philadelphia, was a low mound in pine woods. We are indebted to W. H. Wilson, Esq., in whose charge the estate is, for permission to investigate.

INDIAN NOTES

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| 10 | FLORIDA MOUNDS |
| | <p data-bbox="142 272 899 755">This mound was not considered of aboriginal origin by the inhabitants of the neighborhood and had sustained no previous investigation though it gave evidence of cultivation in former times; its height of two feet, at the time of our investigation, was probably considerably less than its original altitude. Its shape was irregular, its major and minor axes being respectively 57 feet and 36 feet.</p> <p data-bbox="179 768 635 807">It was totally demolished.</p> <p data-bbox="142 821 899 909">It was composed of yellow sand with the usual admixture of charcoal.</p> <p data-bbox="370 977 664 1006">HUMAN REMAINS</p> <p data-bbox="142 1058 899 1541">Human remains were encountered at twenty-five points, some as deep as 3 feet from the surface, beginning at the very margin of one portion of the mound. Bones were in the last stage of decay, but minimum portions of the skeleton being represented—at times parts of the cranium alone and again small pieces of bone almost too fragmentary for identification.</p> |
| | INDIAN NOTES |

EARTHENWARE

Sherds were present in great quantities, the majority undecorated, though some bore the complicated stamps found in Georgia and in Carolina. Two had the stamp familiar in Florida, consisting of small diamonds.

The material of all the ware present in the mound, with the exception of certain fragments, was very inferior.

There were present numerous sherds showing separation from the vessel, not by a clean break but by the aid of a pointed implement, and a number of vessels had pieces removed from the margin by the agency of pointed tools. We have before referred to this peculiar custom as occurring in Duval County mounds and occasionally in other parts of Florida.

At several points in the mound were nests of fragments of earthenware.

In the northwestern margin of the mound, together, just below the surface, with a deposit of charcoal but apparently with no human remains, were two tobacco pipes

of earthenware, of the usual type found in the mounds of Duval County, where the orifice for the stem often equals in size the aperture of the bowl.

This type, probably in vogue before White contact, is present in the stone-graves of Tennessee. We have elsewhere found tobacco pipes of much more modern appearance in mounds containing objects essentially European.

In loose sand was another tobacco pipe in appearance similar to the foregoing.

In the northeastern margin, 15 feet down, with fragmentary human remains 1 foot below, was a small undecorated bowl with a perforation in the base, made previous to baking. This was the only occurrence in the mound of ready-made mortuary ware. For the benefit of those not familiar with our previous Reports on the Florida mounds, we may say that it was the custom in that State, often to knock out the bottom, or to make a hole through the bottom, of earthenware vessels, previous to inhumation with the dead and that this custom is believed to have been

practised with the idea that the mutilation "killed" the vessel, freeing its soul to accompany that of its owner into the next world. Apparently, however, it entered the minds of the more thrifty among the aborigines that vessels of value might serve a better purpose, and hence there arose a class of ceremonial ware, usually small in size, often of fantastic design and always of flimsy material, with bases perforated during the process of manufacture. This cheap ware was probably kept on hand and did duty for vessels more valuable and less readily spared.

One and one-half feet below the surface, about 4 feet in from the northwestern margin, was a small globular vessel of ordinary type, undecorated, intact as to the base, with perforations for suspension below the margin on either side. No human remains were found in the neighborhood.

About 5 feet in from the western margin, and 2 feet below the surface, with no human remains in proximity, were two undecorated bowls, each with a maximum diameter

of about 6 inches. Both showed perforation of the base made after manufacture.

A globular vessel of somewhat over one quart capacity lay about 9 feet in from the northeastern margin and 1.5 feet below the surface. It was undecorated save for a raised band around the inverted rim. With it were the greater part of a small undecorated vessel of ordinary type and various artifacts. Human remains were in association. Within the vessel were two pebbles; fragments of marine univalves; decaying portions of mussel shells; a worked object of shell resembling an imperforate cylindrical bead; and a bit of coquina.

At a number of other points were vessels, some of about one gallon capacity, all undecorated and of most inferior ware. In nearly every case was perforation of the base made after the completion of the vessel. Nearly all were to a certain extent imperfect, some being crushed to numerous fragments.

STONE

Five hatchets of the usual type, some showing considerable breakage, came from various points in the mound, none deeper than three feet.

In sand dyed red with *Hematite*, near human remains, were several mussel shells; one small bit of sandstone; a pentangular slab of red sandstone with a maximum length of 7.5 inches, a maximum width of 7 inches, a thickness of 3 inches; a "celt" 8 inches in length.

Four arrowheads came from different depths. With one was a pebble hammer of quartz.

About 2.5 feet from the surface, together, were fragments of lower animal bones; pebbles; a bit of quartz; fragments of marine shell; and several bits of chert rudely worked to resemble the arrowhead but too imperfect to be of service for any but sepulchral purposes.

Variously associated throughout the mound were a number of sheets of mica;

| | |
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| | <p>pebble hammers; pebbles; several bits of chert and hones of sandstone.</p> <p style="text-align: center;">SHELL</p> <p>Upon several occasions fragments of mussel shells, probably whole at the time of interment, lay with human remains and with artifacts.</p> <p>In one instance, with human remains and other objects, was the columella of a marine univalve neatly worked to a blunt point at either end.</p> <p style="text-align: center;">REMARKS</p> <p>This mound closely resembles many other low mounds of Duval County in the presence of abundant earthenware, of tobacco pipes of prehistoric pattern, of mica and of pebbles.</p> <p>Nothing in the mound indicated acquaintance with the products of Europe.</p> <p style="text-align: center;">TWO LOW MOUNDS AT SOUTH JACKSONVILLE, DUVAL COUNTY</p> <p>These two mounds, almost contiguous, were on property belonging to the Hendricks</p> |
| | INDIAN NOTES |

estate. The ground, destined for building purposes, has been cleared and has evidently been under cultivation.

The smaller mound, circular in shape, had a height of 1 foot 8 inches, a base diameter of 52 feet. The mound had evidently been greatly spread out and a good portion of its contents doubtless scattered. The central portion was dug through, resulting in the discovery of a few sherds and here and there fragments of human remains.

The larger mound was irregular in shape; its major and minor axes being respectively 72 feet and 50 feet. Its height was 3 feet 3 inches. Its general appearance called to mind the low mound at Floral Bluff, Duval County, and the largest of the low mounds south of the great Grant mound, where our investigation was so richly rewarded. Our hopes in respect to this mound, however, were doomed to disappointment, for mound work is a lottery where blanks largely predominate.

The central portion of the mound was entirely dug through, yielding one inter-

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| 18 | FLORIDA MOUNDS |
| | <p>ment badly decayed and apparently previously disturbed. A few sherds with complicated stamped decoration were met with.</p> <p>LOW MOUND AT POINT LA VISTA, DUVAL COUNTY</p> <p>Point La Vista, on the eastern bank of the St. Johns, is about four miles above Jacksonville.</p> <p>In a cultivated field about one-half mile in a northerly direction from the landing was a mound much reduced in height by the plow. Its diameter of base, at the time of its total demolition by us, was 55 feet; its height, 2 feet 4 inches. The mound at the central portion had a thickness of 5 feet between the surface and where the sand ceased to show an admixture of charcoal, that is to say about 2.5 feet above the level of the surrounding territory and an equal distance below it. Yellow sand with no traces of charcoal or sherds, marked the bottom of the mound and into this again certain small pits had</p> |
| | INDIAN NOTES |

been dug, as was shown by the darker color of the sand employed to fill them.

Somewhat below the level of the surrounding territory was a stratum over one foot in thickness of sand blackened by fire, containing abundant particles of charcoal. Above this layer were brown sand and white sand intermingled at places, surmounted by a stratum of cherry-colored sand owing its tint to the use of *Hemalite*, of irregular thickness—averaging, perhaps, 1 foot. This bright colored stratum lay beneath a superficial layer of brownish sand about 1 foot in thickness.

Interments were in considerable numbers—between thirty and forty—and in the last stage of decay, some in fact so far gone that the method of burial was not determined, but in all cases where sufficient evidence remained the burial in anatomical order was indicated.

Quantities of sherds were in every portion of the mound; some plain, others with punctate decoration, and others again bearing the square or the diamond-shaped stamp common to Florida ware. Intricate

stamped decoration, prevalent in Georgia and present in many mounds of Duval County, was not met with.

About 3 feet from the surface was a bowl of approximately one gallon capacity, of ordinary type, bearing the square stamped decoration. The bottom had been intentionally knocked out. No human remains were discovered in the immediate neighborhood.

In a pocket of brownish sand, extending into the untouched sand below the mound, seemingly a small grave, over 5 feet from the surface, in the central portion of the base, with human remains, was an undecorated earthenware pipe (Fig. 1) of the usual type of the mounds of Duval County.

A curious earthenware knob, evidently broken from some vessel, lay in the sand.

Two polished hatchets were met with, one with human remains, 6 inches from the surface, the other in caved sand.

On a fireplace 5 feet from the surface were certain bones of the deer.

Several chips of chert, a rude implement of chert, a hone of sandstone and two

chert arrowheads, were found separately in the sand.

Loose in the sand were several conchs, a number of oyster-shells and the columella

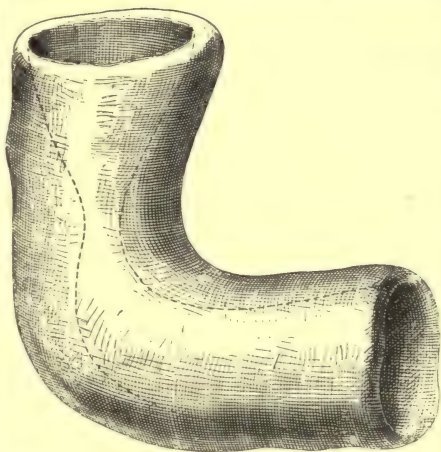


FIG. 1.—Tobacco pipe of earthenware. Low Mound at Point La Vista. (Length over curve, $5\frac{1}{8}$ in.)

of a large marine univalve worked to a point.

As this portion of Florida has been long under cultivation, it is impossible to say

what artifacts may have been removed by the plow in previous years.

LOW MOUNDS NEAR POINT LA VISTA,
DUVAL COUNTY

Partly on the property of Mr. Shad, resident near by, and of Mrs. J. R. Hunter, of Albany, N. Y., about one mile in a southerly direction from Point La Vista, were three low intersecting mounds (Fig. 2) all showing signs of former cultivation. By arrangement with Mr. Shad, and with kind consent of George M. Wyeth, M. D., of Jacksonville, in charge of the Hunter property, these mounds were totally dug through at a depth of three to four feet below the level of the surrounding territory.

They contained the usual charcoal and many fireplaces and were composed of yellowish-brown sand unstratified.

Mound A. Diameter of base, 29 feet; height, 2 feet 5 inches.

No skeletal remains were encountered until the central portion of the mound was reached when small fragments of mould-

ering human bones were met with at four different points, from one foot to three feet nine inches from the surface. No artifacts were in association save in one instance when a small stone "celt" lay near bones.

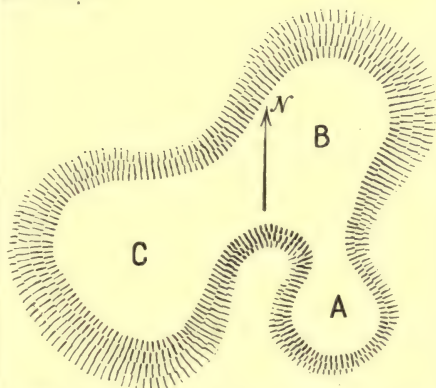


FIG. 2.—Plan of mounds south of Point La Vista

With the exception of a nest of many fragments of earthenware, in the southern margin, sherds were infrequent. Certain fragments of earthenware were undecorated, while others bore a complicated stamped

decoration, several of these being additionally decorated with crimson pigment—the first occurrence in our experience of the combined ornamentation.

Four small arrowheads, too rude for aught save mortuary deposits, were found separately. A bit of chert came from a depth of 5 feet.

Singly were: one pebble-hammer; one rude piercing implement of chipped chert and one pebble about 2 by 2.5 inches by one inch in thickness, worked into an oblong shape with rounded corners.

Mound B. Diameter of base, 52 feet; height, 2 feet 1 inch. In this mound interments, consisting, as in the other, of mouldering fragments, were met with at six different points.

Three and one-half feet from the surface, with human remains, were: one bit of chipped chert; a few marine mussel shells; a piece of sandstone; part of a columella of a marine univalve; and a small *Fulgur carica* with a hole knocked through one side. These all lay in a pocket of sand dyed scarlet with red oxide of iron.

Also in the scarlet sand, 4.5 feet from the surface, with a few bits of human bone, were: a small sheet of mica; a smoothing stone of chert; a perforated *Fulgur* and several molars and incisors and one canine of some carnivore.

A streak of red sand beneath a seam of charcoal led to a large cockle shell (*Cardium*) badly decayed, and a small vessel of earthenware with two compartments and a handle on either end, very similar in type to one taken by us from the Hopson mound, Lake County, and figured by us (pl. LXXXV, fig. 2) in our Report on the mounds of the Ocklawaha river. Apparently no human remains were with these objects.

A small imperforate undecorated bowl of ordinary type lay one foot from the surface with fragments of parts of a large undecorated clay vessel, near human remains.

Three feet from the surface, apparently unassociated with skeletal remains, were portions of a vessel of about six quarts capacity, with complicated stamped deco-

ration. The base showed perforation after manufacture.

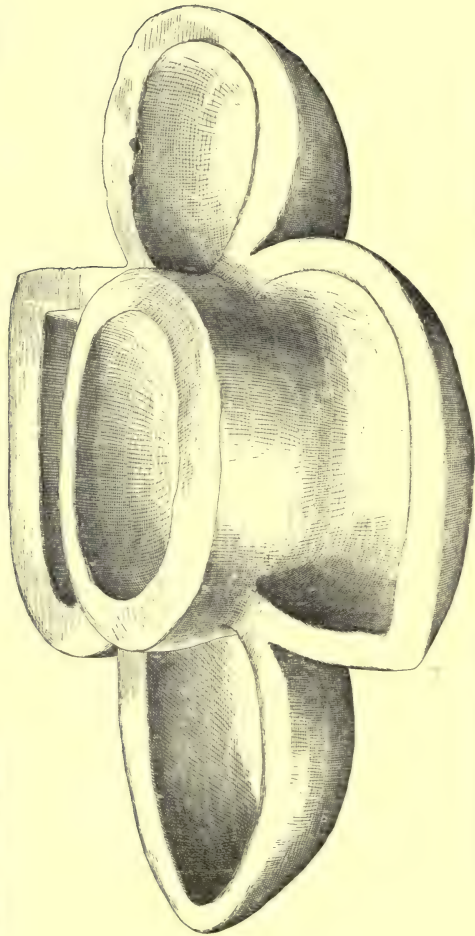
Several pebble-hammers lay singly loose in the sand.

Mound C. Diameter of base, 58 feet; height, 2 feet 2 inches. Human remains, mere fractional parts of the skeleton, present at ten different points, were confined to the southern portion and the eastern margin of the mound.

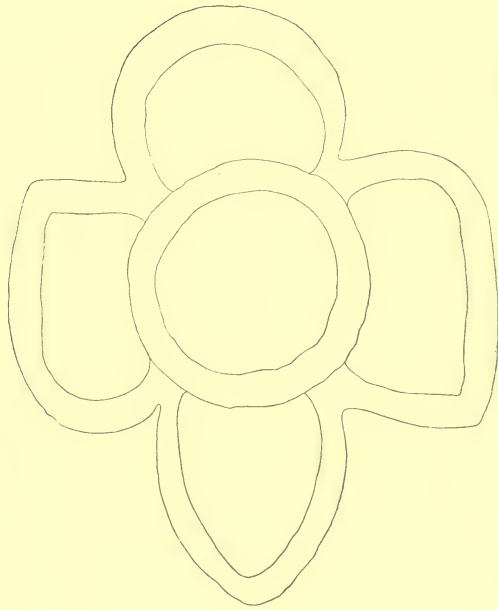
Three feet, eight inches from the surface, in the southern margin, with several large shell beads and one small shell (*Marginella*) longitudinally pierced, were portions of a cranium of a child about nine years of age; also several molars and one vertebra. In the vicinity lay a hatchet of polished stone.

Together were: three pebble-hammers, one pitted on one side and neatly rounded; one small pebble; a cutting implement of chipped chert, 6 inches in length, possibly incomplete; several conchs (*Fulgur carica*) badly decayed, perforated in the body whorl opposite the aperture; bits of columellæ of large marine univalves; several





EARTHENWARE VESSEL WITH FIVE COMPARTMENTS, MOUND SOUTH OF POINT LA VISTA



OUTLINE VIEW FROM ABOVE OF VESSEL SHOWN IN PLATE I

mussel shells, fragmentary through decay; and what decay had spared of one piercing implement of bone. All these lay with human remains in the eastern margin of the mound, about 3 feet from the surface.

In close proximity to the deposit just described were human remains at about the same depth. With them were one lance head, two arrowheads and eleven chips, all of chert.

In various parts of the mound were nests of many fragments of various vessels, buried in close contact, as we have described elsewhere as present in numbers of low mounds of Duval County.

Three and one-half feet from the surface, beginning almost at the southern margin and extending in for about 6 feet, was a large log or several smaller ones pressed together with lines of separation no longer distinguishable, in the last stage of decay. The upper surface was considerably charred.

About 5 feet in from the southern margin and 1 foot, 8 inches from the surface, unassociated with human remains, was a

vessel of heavy earthenware, unique so far as our experience extends. This interesting vessel, entirely intact, consists of four irregular compartments joined together on the same plane. From their point of union a fifth compartment rises as shown in Plates I and II.

We are indebted to Professor Holmes for a sketch of a five-chambered vessel about 5.25 inches square, from a mound in Franklin County, Florida. The central compartment is not raised above the other four, as is the case in our specimen, but is on the same plane and surrounded by them. Various high authorities consulted by us express ignorance of the discovery within the limits of the United States of five-chambered vessels other than the two here recorded.

Nothing in these mounds gave any evidence of intercourse with the Whites.

LOW MOUND AT MULBERRY GROVE,
DUVAL COUNTY

About ten miles south of Jacksonville, on the west bank of the St. Johns, is the estate

of A. M. Reed, Esq., known as Mulberry Grove. We are particularly indebted to Mr. Reed for permission to investigate his mound inasmuch as it was under cultivation at the time of our visit. The mound is reported to have been ploughed down for thirty years and materially reduced in height. Its diameter of base was 46 feet; its height, 2 feet.

A central excavation, 32 feet in diameter (and this, we think, included the original mound) was carried through at a depth of about 5 feet. The mound was of brown sand, unstratified, and contained great numbers of fireplaces with charcoal. The form of burial, with one exception, was in anatomical order, about two dozen skeletons being met with, all much decayed. The crania were also badly crushed. About 2.5 feet from the surface was a heap of calcined human bones with charcoal.

Some of the crumbling skeletons lay at a depth of 5 feet from the surface.

Sherds were infrequent and probably of accidental introduction.

With a skeleton, 3.5 feet from the surface, were two vessels of earthenware and a pipe of the same material. The larger vessel lay on its side across the right fore-



FIG. 3.—Earthenware vessel with incised decoration. Mound at Mulberry Grove. ($\frac{1}{2}$ size.)

arm; the smaller vessel, on its base, with the tobacco pipe, was on the right hand side of the cranium. Beneath the skull, were two piercing implements of bone.

Both vessels are virtually intact and imperforate as to their bases. Each has a small hole on either side beneath the margin, for suspension. The larger has two incised parallel lines beneath the margin of the opening. Its dimensions are approximately: height, 4.5 inches; maximum diameter, 3.25 inches; across mouth, 2.5 inches. The smaller vessel, almost cylindrical (Fig. 3), has an interesting incised decoration. Approximate measurements: height, 4.25 inches; maximum diameter, at mouth, 2.75 inches; at base, or minimum diameter, 2.25 inches.

Five feet down, near a fragmentary skull, were one arrowhead and twenty-six small fragments of chert. We have before made reference in our paper on certain mounds in Duval County to the placing of numbers of such fragments together in the mounds.

In another portion of the mound, at about the same depth as the previously mentioned deposit, with human remains, were eleven small bits of chert and one shell gouge.

Near the surface as it was at the period of excavation, lay a small "celt" with human remains.

Loose in the sand were several bits of chert and a portion of a polished stone hatchet, found separately.

What this mound may have contained at the period of its abandonment, it is, of course, impossible to say. Nothing discovered by us pointed to intercourse with the Whites.

MOUND AT PEORIA, CLAY COUNTY

Doctor's Lake has its union with the St. Johns at Orange Park about sixteen miles south of Jacksonville, on the west side of the river. About six miles in from the mouth of the lake, almost at its extremity, is the settlement of Peoria. In the outskirts of Peoria, on the property of Mr. J. A. Silcox, was a mound 4 feet 2 inches high, and 75 feet across the base. It had sustained very little previous examination, but its height had been greatly diminished by washing down of sand and trampling

of cattle, which, at the same time, had increased its diameter.

At the time of our previous mound work on the St. Johns we were unable to come to terms with the owner of this mound, the location of which, however, is noticed in our Report.

The mound was totally demolished. It was composed of brownish sand, with the usual intermingling of charcoal.

About 5 feet down from the level of the summit a thin, irregular layer of dark sand and charcoal ran through the mound.

Less than one dozen interments were encountered, and these were represented by mouldering fragments.

Sherds were very infrequent, all coming under our notice being undecorated save one having the ordinary square stamp.

Throughout the mound were several whole and fragmentary arrow points, three pebbles, a bit of chert and a piece of mica.

Four and one-half feet from the surface, with very fragmentary human remains, lay fourteen arrow points.

Almost in the immediate center of the mound, 2.5 feet from the surface, was a concavo-convex ornament of sheet copper, 1.4 inches by 1.2 inches, having a narrow margin beaded in the fashion so common in the mound ornaments of copper.

Nothing further of interest was encountered.

MOUND INVESTIGATION ON THE EAST COAST OF FLORIDA

Our investigation of aboriginal mounds on the east coast of Florida, south of St. Johns County, occupying three months of the Winter of 1895-1896, included such territory as borders the Halifax river; the Hillsboro' river, including the Mosquito lagoon; the Indian river and Lake Worth; as well as the tributary streams, Tomoka creek, Spruce creek, Banana river and St. Lucie river.

In addition, certain mounds in the neighborhood of the town of Fernandina were examined and the St. Mary's river, separating portions of Florida and of Georgia,

was gone over so far as the head of navigation. To this work additional time was devoted.

The Halifax, Hillsboro' and Indian rivers, so-called, are not rivers strictly speaking, but long and comparatively narrow stretches of salt water, connected with the Atlantic Ocean by various inlets and separated from the sea by a comparatively narrow strip of sand, at no place five miles in breadth. They extend north and south and their total length in a direct line is about 187 miles.

The Banana river is simply a portion of the Indian river, lying east of Merritt's Island.

Tomoka and Spruce creeks and St. Lucie river, at a certain distance above their outlets, are fresh water streams.

The aboriginal mounds bordering the Halifax, Hillsboro' and Indian rivers, while examined with considerable care, were by no means so exhaustively investigated by us as have been the mounds of the St. Johns river and of other parts of Florida, and our conclusions must not be regarded as final but rather taken as indications.

It would seem that the mounds of this region, considerable in number and some of great size, were mostly erected for other than sepulchral purposes, inasmuch as human remains appear to be absent from the bodies of the mounds though in some cases numerous interments were present near the surface, sometimes associated with art relics of European manufacture, such as glass beads, silver beads and the like.¹ These burials we look upon as intrusive, made by Indians coming later than the makers of the mounds.

In certain cases smaller mounds contained human remains down to the base, but in every case these remains, where any other objects were found at all, were associated only with bits of shell or of coquina.

Mr. Andrew E. Douglass, of the Museum of Natural History, New York, who has spent a number of seasons on the east coast and has published various valuable papers descriptive of his work,² reached virtually the same conclusions as ourselves, and we are strongly of opinion that a more thorough investigation of these

mounds, though earnestly to be desired, will not be fruitful of results.

Another point strongly impressing itself upon us was the almost entire absence of stone (unless coquina³ may be so termed) in the territory bordering the Halifax, the Hillsboro' and the Indian rivers, the mounds being entirely free from chips, cores, and other refuse material of chert so abundant in mounds of the St. Johns river.

Large fields of shell, denoting aboriginal dwelling sites, are numerous, yet upon them we found not a single arrowhead or fragment of hard stone, while persons cultivating these fields invariably expressed ignorance as to the discovery of stone upon them. Upon similar fields and shell heaps of the St. Johns arrowheads and flint chips are abundant; this absence of stone on the east coast is certainly worthy of remark considering its comparative abundance on a river not over thirty, and at one point only five, miles away.

Mr. Douglass has remarked the absence on the east coast of the polished stone hatchet, or "celt," from mounds south of

St. John County, or about where the Halifax river begins, and we have not in our experience learned of the occurrence of this implement on the east coast south of the point referred to by him, though on the St. Johns river a number were taken by us from Thursby Mound, about twenty-seven miles farther south, while one small hatchet was found on the surface not far north of Lake Monroe. Beyond this point, even on the St. Johns, the stone "celt" seemed to be absent with the exception of one rude cutting implement of the polished "celt" type⁴ taken by us from the island shell heap known as Mulberry Mound, situate where the St. Johns river leaves Lake Poinsett, about six miles west of Cocoa on the Indian river.

As we have said, exhaustive work was not done by us on the east coast and as various lists of the earthworks of that section have already appeared, we shall not go into a detailed account but shall give results obtained in certain of the mounds examined by us which, so far as

our investigation has extended, were typical of the whole.

Stone House Mound.

Mounds at Courtenay (2).

Mound at De Soto.

Mound at Tropic.

Gleason Mound.

Low Mounds near mouth of Banana river (2).

Mound near St. Lucie river.

STONE HOUSE MOUND, VOLUSIA COUNTY

Spruce Creek enters the Halifax river opposite the town of Ponce Park. About 1 mile up Spruce Creek, turning into Murray's Creek and following the stream about 1 mile, the Murray dwelling is reached, from which the mound is distant about 1.5 miles inland, in a southwesterly direction. The mound, in thick "hammock," and covered with palmetto and other trees, has a height of 20 feet, a diameter at base of 144 feet. The trench made by Mr. Andrew E. Douglass,⁵ was the only previous investigation apparent on the mound.

Parts of two days, with nine men to dig, were devoted to investigation. Neither burial nor artifact rewarded our labors—a result similar to that attained by Mr. Douglass.

Two feet beneath the surface, such parts of the mound as were dug into by us, were encased in heavy slabs of coquina. This curious feature was noted also by Mr. Douglass in the portion investigated by him.

MOUND AT COURTENAY, BREVARD COUNTY

The settlement of Courtenay, on Merritt's Island, which here forms the eastern shore of the Indian River, is about eight miles north of the town of Cocoa.

On the property of Mr. John H. Sams, at Courtenay, is a mound which was cordially placed at our disposal for investigation by the owner. The mound, entirely surrounded by a trench, presents a striking appearance, giving the impression of greater altitude than it really possesses. Its height is 11 feet; its diameter at base about 100 feet, making allowance for a certain amount of sand evidently washed from the mound.

An excavation 28 feet in diameter and from 5 to 6 feet deep, was made in the central portion of the mound. A few scattered human bones were present immediately below the surface. At a depth of 5 feet was a sherd of considerable size. Loose in the sand was one fragment of chipped chert. Beyond these, nothing was encountered and the sand, coarse and yellow, had the raw look peculiar to mounds containing no organic remains.

LOW MOUND AT COURTENAY, BREVARD COUNTY

In the southern extremity of the settlement of Courtenay, in thick "hammock" land, on the property of Mr. H. J. Tiffin, of Montreal, Canada, was a mound about 2 feet in height and 35 feet in diameter. The central portion of this mound was completely dug through at the courteous invitation of the owner. At two points were fragmentary human remains which, with one small sherd, were the entire yield of the mound.

MOUND AT DE SOTO, BREVARD COUNTY

The Banana river, as we have stated, is simply a portion of the Indian river separated from the main body by Merritt's Island. On the east side of the river, about 7 miles south of its northern extremity, at or near De Soto, is the estate of Mr. F. Y. Hanna, an unoccupied house with a landing. About one-half mile in a north-easterly direction from the landing, on Mr. Hanna's property, is an irregular mass of sand 6 feet 4 inches in height and 75 feet across the base. An excavation made in the center, 18 feet by 24 feet by 4 feet deep, yielded four burials in anatomical order, none over 18 inches from the surface. With one skeleton were two bits of looking-glass, with another was a fragment of conch-shell. About one foot from the surface were parts of an undecorated bowl. This mound, at a short distance below the superficial portion, was composed of that raw-looking bright yellow sand, in which, as we have stated, we have never yet met with interments.

MOUND AT TROPIC, BREVARD COUNTY

Near the southern extremity of Merritt's Island is the settlement of Tropic. On the property of Mr. M. F. Dwyer, of New York, in a cultivated pineapple patch, was a symmetrical mound of white sand, 3 feet 8 inches in height and 48 feet across the base. It was practically demolished. No stratification was noticed. A considerable number of fragmentary human remains, very badly decayed, including a number of isolated crania, were present at all depths. A number of bits of plain earthenware and several stamped in squares, were loose in the sand.

Eight small shells (*Dosinia discus*) were found together, while masses of coquina and smaller bits were present in the mound. An occasional fragment of *Fulgur* was met with. Beyond this, greatly to our disappointment, for the mound had a very promising appearance, nothing was discovered.

GLEASON MOUND, BREVARD COUNTY

On the eastern bank of the Banana river, a short distance above its union with

the Indian river, in full view from the water, is a great shell-heap mainly composed of the shells of marine bivalves (*Dosinia discus*), a section of which has been laid bare by the river. In the "scrub," about one-eighth of one mile in a northerly direction from this heap, is a mound on the property of ex-Governor Gleason, of Eau Gallie, who courteously placed it at our disposal.

The mound, which is not symmetrical and had suffered from much superficial investigation, has a height of about 10 feet and a diameter at base of about 150 feet.

The mound, which was thickly covered with undergrowth, was cleared by us near the center of the summit plateau, giving a space about 32 feet in diameter, which was dug through to a depth of from 5 to 7 feet. In addition to this, considerable work was done on the northern and eastern slopes.

The sand, whitish in color, was unstratified.

Burials—all superficial and all in ana-

tomical order—were numerous, about thirty being met with.

With the majority of the bodies no relics were found. With others were flat bits of coquina; portions of clam shells, showing wear, and occasionally a mass of coquina.

Near human remains were three large glass beads and a round bead of silver, apparently of European make.



FIG. 4.—Ornament of silver. Gleason mound. ($\frac{1}{2}$ size.)



FIG. 5.—Ornament of brass. Gleason mound. ($\frac{1}{2}$ size.)

With a burial about two feet from the surface was a small gorget of silver, oxidized, having three perforations, two apparently made with a sharp cutting tool, the other bored from one side and countersunk (Fig. 4), representing the head of a duck.

With another superficial burial, lying near the lower jaw, was a somewhat similar ornament of brass (Fig. 5).

Ornaments of this type are not uncommon in Florida, though we have met with none on the St. Johns.⁶

Loose in the sand throughout the mound were a few bits of ornamented earthenware; one *Fulgur carica*, much worn at the beak, but without the usual perforation; and one large marine shell (*Fasciolaria*). A considerable number of these shells, all more or less broken as to the body whorl, lay near previous excavations.

Five feet from the surface were the remains of an undecorated bowl of considerable size, which had been interred whole or nearly so. No human remains were found in the neighborhood of this bowl, and it lay at a much greater depth than any other discovered by us. It had probably been lost or broken during the construction of the mound.

From the eastern slope, with human remains, were taken two imperforate drinking cups of shell, one within the other;

another alone; and two beads of silver seemingly of European workmanship.

As no burials or indications of interment (and discoloration of sand usually shows where bones have been) were met with in the Gleason mound at a depth of over 2 feet, we are of opinion that later Indians utilized for burial a pre-existing mound.

MOUNDS NEAR MOUTH OF BANANA RIVER, BREVARD COUNTY

On the property of Mr. John Aspinwall, of New York, about one-half mile south of the Gleason mound, 50 yards apart approximately, were two mounds in thick "scrub."

The smaller mound, about 4 feet in height, was dug through as to the central portion, yielding a number of superficial burials of the bunched variety. With some of these were small bits of coquina and of shell.

The larger mound, about 7 feet in height, yielded nothing to an investigation conducted through the central portion.

MOUNDS NEAR ST. LUCIE RIVER, DADE
COUNTY

About one and one-half miles above the railroad bridge, or six and one-half miles, approximately, from the river's mouth, near the southern bank of the south fork of the St. Lucie River, is a mound in the pine woods in full view from the stream.

Its height is about 6 feet above the general level on the south and west, while on the other two sides deep depressions, made by the removal of sand for the mound, give it the appearance of much greater altitude.

The diameter of its base is about 80 feet.

A considerable section was dug out from near the margin to the center and the base of the central portion was carefully explored.

Several superficial burials were met with toward the center and two at different points about 3 feet from the surface.

With the remains were no artifacts whatsoever.

Loose in the sand, separately, were two fragments of undecorated earthenware, two bits of *Hematite* and a number of pieces of charcoal.

At Spruce Bluff, up the north fork of the St. Lucie river, is a large mound which we did not investigate. Considerable digging had been attempted in the central upper portions. Residents reported no discoveries during these investigations.

FLORIDA COAST MOUNDS NORTH OF THE ST. JOHNS RIVER

By turning into Sisters creek near the mouth of the St. Johns river, an inland passage by water can be made to Fernandina. This inland route has been carefully searched by us for mounds upon two occasions.

Low mound at the Sawpit, Duval County.

Low mound at Dr. Harrison's, Amelia Island, Nassau County.

Mound south of Suarez Bluff, Amelia Island, Nassau County.

Mound northeast of Suarez Bluff, Amelia Island, Nassau County.

Light-house mound, Fernandina, Nassau County.

LOW MOUND AT THE SAWPIT,
DUVAL COUNTY

A small mound at the Sawpit, about 10 miles north of the St. Johns river, 4 feet in height and 35 feet across the base, was completely dug through by us as to its central portion. A few crumbling skeletons in anatomical order were discovered unassociated with any art relics whatsoever.

On the southern end of Talbot Island, Duval County, on the property of Mr. Spicer Houston, of Mayport, are two symmetrical sand mounds about one-half mile apart. This gentleman values the right to investigate at one thousand dollars and is still owner of undisturbed aboriginal earthworks.

LOW MOUND AT DR. HARRISON'S, AMELIA
ISLAND

On the property of Dr. Robert Harrison, about one-half mile in an easterly direction from his house, which overlooks the Amelia river at a point about one mile, in a southerly direction, from Suarez Bluff (Amelia City, Nassau County) was a mound 1.5 feet high and 30 feet across the base. It had sustained little if any previous investigation and was totally demolished by us.

It was composed of yellowish sand with pockets of white sand, and through the central portion a layer of white sand several inches in thickness ran considerably below the level of the surrounding territory.

Interments, probably a dozen in all, were, curiously enough, marginal and beneath the slope, no remains being met with in or near the central portion of the mound. Both forms of burial, the bunched and that in anatomical order, were present. In one case the remains were in part calcined, while other portions of the skeleton were charred in places only. No charcoal

or fire-whitened sand lay with these bones which consequently must have been exposed to flames elsewhere.

A number of the burials lay beneath deposits of oyster shells.

The remains were in much better state of preservation than is usually the case in the mounds. One skull, almost intact, was preserved.⁷

With two crania, at different points, were numbers of longitudinally perforated shells (*Olivella*).

With human remains was found a portion of the shaft of a large pin of shell, showing recent fracture. The remaining part doubtless escaped us.

But two sherds were brought to our attention.

MOUND SOUTH OF SUAREZ BLUFF, AMELIA ISLAND

In a large shell field about three-quarters of one mile in a southeasterly direction from Suarez Bluff, on property belonging to Mr. Scott of that place, was a mound

6.5 feet high and 44 feet across the base. It had probably lost about 2 feet in height through previous investigation.

The mound was built on a shell heap of irregular surface. A thickness of 6 feet of solid sand was at certain portions of the mound and scarcely 2 feet at others.

About two-thirds of the mound was dug down.

Nineteen burials, from 1 to 6 feet from the surface, all in anatomical order, were discovered.

Occasional pockets of sand colored with *Hematite* were near the base. A few bits of pottery lay loose in the sand and at one point were fifteen marine univalves (*Fulgur carica*, *Fulgur perversum*, *Fasciolaria*). A few shell beads, lying with a skeleton, were the only artifacts discovered.

MOUND NORTHEAST OF SUAREZ BLUFF, AMELIA ISLAND

About 1.5 miles from Suarez Bluff was a mound 5 feet 2 inches in height with a diameter at base of 68 feet. About one-

half of this mound, which was kindly placed at our disposal by Mr. Jonathan Buzzell of Suarez Bluff, or Amelia City, as it is now called, was demolished by us. It was composed of yellowish sand with little, if any, intermingling of charcoal. A layer of oyster shells and midden refuse, such as fragments of bones of the turtle and of the deer, but apparently with no sherds, occupied a central position in the mound. This deposit began about 18 feet from the margin and was then a little over 2 feet from the surface, and apparently so throughout. Its thickness was about 2 feet (see diagram), increasing toward the center. There were no oyster shells in the marginal portion of the mound.

At one point in the marginal, or sandy portion, 1.5 feet from the surface, was a deposit of calcined fragments of bone, some belonging to the turtle. This mound was evidently not a shell heap covered with sand, since the mass of shells, when encountered, did not present a sloping surface but showed an abruptly vertical surface 2 feet in height, very much as though

the shells had been thrown into an excavation.

No human remains or art relics, with the exception of one arrow head, were met with.

LIGHT-HOUSE MOUND, FERNANDINA, NASSAU COUNTY

The Light-house⁸ mound, in a shell field and in the neighborhood of others, about 150 yards south of the light-house, probably one mile east of the town of Fernandina, was kindly placed at our disposal by Mr. E. D. Lukenbill of the Fernandina Development Company. Our thanks are tendered for numerous courtesies also to Mr. H. L. Linville, port warden of Fernandina.

The height of the mound, which was totally demolished by us, was 12 feet; the

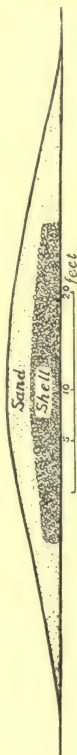


FIG. 6.—Section of mound northeast of Suarez Bluff.

diameter of its base, 75 feet. It presented a very symmetrical appearance when stripped of the dense growth of vegetation which covered it, the ascent at some points being at an angle of 44° . Excavations 3 to 4 feet deep to the west and northwest of the base showed whence the material was derived. There had been some previous investigation on the immediate summit.

COMPOSITION OF MOUND

Structurally the mound was of considerable interest, the strata well defined. Immediately in a central position was a cone of white sand, surrounded and surmounted by the regular strata of the mound.

The stratification of the mound from the top downward, a little north of the center, was as follows:

- 2 feet 6 inches—dirty brown sand.
- 1 foot—dark sand with oyster shells.
- 1 foot—pink sand mingled with oyster shells and with white sand.
- 5 feet 8 inches—yellow sand.
- 7 inches—dark sand and oyster shells.

* INDIAN NOTES

2 feet—light sand to yellow sand of the base.

At various points in the mound were pockets of sand artificially colored with *Hematite*.

The distance between the summit of the mound at the center to the yellow sand at the base, where charcoal and human remains were wanting, was 15 feet.

HUMAN REMAINS

Exclusive of loose bits of bone, doubtless thrown from the previous excavation, seventy-four skeletons, all seemingly in anatomical order, were met with, and one deposit of charred and calcined human remains. We are, of course, unable to estimate the number of skeletons thrown out or carried away prior to our visit. The first interment was encountered 10 feet in from the southwestern margin of the base. With very few exceptions no art relics lay with human remains, and if we except a stone hatchet found with a skeleton 8 feet from the surface and some beads of

shell with another interment, no art relics were associated with burials in the body or on the base of the mound.

In no previous mound work have we found so great a percentage of pathological specimens as in this mound, and, as has not been the case in other mounds, entire skeletons seemed affected, and not one or possibly two bones belonging to a skeleton. The pathological conditions were so marked and cranial nodes so apparent that, in view of the fact that no objects positively indicating White contact were discovered in the mound, though the utmost care was exercised by a trained corps of assistants, we are compelled to regard the bones with the greatest interest since evidence of contact with the whites being wanting we must look upon these bones as of pre-Columbian origin. We may state here that all bones preserved by us came from depths in the mound which insure their derivation from original burials. These bones, found 8 to 12 feet from the surface, and lying beneath numerous undisturbed layers are as unmistakably of an early origin

as any yet described and much more reliable than most.

Dr. Washington Matthews, whose memoir on the human bones of the Hemenway collection is so well known, has kindly consented to study and to report upon these bones from the Light-house mound.

Perforation of the humerus

| | Male | | Female | | Uncertain | |
|------------|------------|----------------|------------|----------------|------------|----------------|
| | Perforated | Not perforated | Perforated | Not perforated | Perforated | Not perforated |
| Right..... | 3 | 14 | 4 | 3 | 4 | 3 |
| Left..... | 3 | 7 | 6 | 2 | 3 | 2 |

CANINE REMAINS

Professor Wyman, as we have stated in a former paper, found no remains of dog during his researches among the shell heaps of the St. Johns river. In point of fact no practical work was done among the sand mounds by this pioneer of the archæology of Florida.

AND MONOGRAPHS

In a shell-heap near the bank of the Econlockhatchee creek, Orange County, we discovered a canine lower jaw which Professor Cope minutely examined, giving his results, with figures, in the *American Naturalist*.⁹

Professor Cope concluded that the jaw under examination belonged to an unknown kind.

A canine jaw from another shell-heap examined subsequently, presented features with which Professor Cope was unfamiliar.

On the base of the large sand mound at Tick Island, Volusia County,¹⁰ the skeleton of a dog was found by us, the skull and certain other bones of which, forwarded to Professor Cope, were passed upon as follows by that eminent authority: "The bones you send are those of a dog but of what species I am not sure. It is no wolf or coyote but differs from ordinary breeds of domestic dogs. Nevertheless, it may be some form domesticated by the Indians, with which I am not familiar."

Fifteen feet from the surface of the Lighthouse mound, or 3 feet below the level of

the surrounding territory, was discovered the skeleton of a dog.

The cranium has been submitted to Dr. C. Hart Merriam, who was, unfortunately, unable to spare time for an exhaustive examination, being about to leave town for the summer. According to Dr. Merriam the skull is not that of a coyote, nor does it belong to any type of domestic dog with which he is familiar.

Professor Cope is of opinion, after an examination of the skull, that it belongs to neither wolf nor coyote, but is probably that of a domestic dog, though by no means of necessity one obtained from Europeans.

There are, however, according to Professor Cope, certain domestic dogs whose crania cannot be distinguished from those of wolves.

Professor Cope also made an examination of a canine skull from the great shell deposit at Damariscotta, Maine, in which no articles of European origin have ever been met with at a depth greater than a few inches from the surface. The Damariscotta skull, according to Professor Cope, strongly resembles that from the Light-house mound.

Professor Putnam, who has made a careful study of the skull from the Light-house mound, writes as follows:

"I have lately secured for comparison several dog skulls, among which is that of a mongrel greyhound. This skull resembles that of the coyote more than it does the gray wolf. It differs from the coyote, however, in being slightly more convex. In the coyote the frontals are flatter than in the gray wolf.

"I have a skull of an Irish setter which agrees with that of a gray wolf, except that it is slightly higher over the orbits, and there is more of a concavity along the union of the frontal bones. The jaws are also shorter, but the teeth are of about the same size.

"I have the skull of an English collie which differs from the gray wolf in the same way as does the setter's skull; that is, the frontal bones are slightly more concave in the center and a little higher. The jaws are proportionately shorter than the jaws of the setter, and of course shorter than those of the wolf, and the molar teeth are proportionately smaller.

"The skull of the collie agrees in size and height and convexity of the frontals with the nearly perfect skull I have from the Damariscotta shell-heap; it also agrees with the teeth with the exception that in my Damariscotta skull the second and third molars are slightly stouter and approach more nearly to the corresponding teeth of the setter.

"Thus, I should say that the Damariscotta shell-heap skull is very close to the English collie, and also very close to the gray wolf. This Damariscotta skull was found very low down in the great shell-heap, and it is unquestionably of prehistoric time, probably centuries before any white man reached this continent. There is, therefore, no possibility of its being a domestic dog brought over by the Whites. The close affinities, in its shape, with the setter, and thus with the gray wolf, lead me to regard it as a domestic dog of the people whose refuse formed that ancient shell-heap; probably a domesticated gray wolf, unless there was some now extinct species of the genus *Canis* from which this dog was derived, the only prominent difference being in the shorter jaws of the dog.

"I have also three skulls from the 'ash-pits' of the ancient cemetery near Madisonville, Ohio. In the contents of about 1,500 of these ash-pits, which we have carefully examined, not a sign of White contact was found; and they are unquestionably of prehistoric time. These three skulls from the ash-pits are slightly smaller than the Damariscotta skull, but agree with it in every other particular.

"I have examined two skulls (in the American Museum of Natural History) found with an Indian skeleton on Staten Island, New York. This burial-place is also of unquestionably prehistoric time. These two dog skulls are of about the same size as those from the Madisonville cemetery, and are of the same character.

"I have two skulls of dogs from the Lake Dwellings, at St. Aubin and Neufchatel, Switzer-

land, which agree in size with the three above-mentioned from the ash-pits at Madisonville, but differ from them in having the frontals slightly flatter and in having the interparietal crest nearly obliterated. A fourth skull from the Madisonville ash-pits, smaller than the other three, agrees with these Swiss Lake skulls in the latter character.

"I cannot distinguish any important difference between the dog skull you found in the Florida mound and those from the Madisonville ash-pits.

"Thus your Florida skull, while it agrees very closely with the English collie, also agrees, as well, with the other dog skulls which are of unquestionably prehistoric time. The condition of the bones indicates considerable antiquity and unless objects belonging to the Whites were found associated with the bones of the dog, or the bones themselves were found near the surface, and you have evidence that they belong to an intrusive burial, I should have no hesitation whatever in considering your Florida skull as that of a domestic dog of the people who built the mound."

Three varieties of dog are found with the dead in the Necropolis of Ancon, Peru, one of which strongly resembles the collie.¹¹

EARTHENWARE

Sherds were infrequently met with, the majority being undecorated, though

several from marginal parts of the mound bore cord-marked and stamped decorations. One bowl of about one pint capacity, with incised marginal decoration, lay apparently unassociated on the base. It unfortunately received a blow from a spade.

STONE

In all, eight stone hatchets, or "celts," were met with, as a rule, in caved sand and probably from upper strata. One lay with a skeleton 3 feet from the surface. With it were two large barrel-shaped beads of shell.

No arrow heads, whole or fragmentary, were met with, nor were any fragments of chert, so numerous in many mounds, apparently present in this one.

SHELL

Loose in the sand, separately, were two fine large marine shells (*Fasciolaria*), while at various depths were several heavy conchs (*Fulgur carica*) worn and chipped down at the beak and with a round or

oblong perforation opposite the aperture in the body-whorl between the shoulder and suture.

It has been customary to regard such shells as having served as war clubs. We have elsewhere pointed out that in the great majority of cases they must have been put to other uses, and give here some of our reasons:

1. The beak shows wear as by constant use.

2. The margin of the perforation is frequently smoothed as by continued motion against a handle, which would not be so in the case of a club.

3. Some specimens are entirely too small to have been of any avail as weapons of offense.

4. The hole is usually so placed that the handle would not be at right angles to the shell as would be the case with a war club.

5. The perforation is frequently too small to admit a handle of sufficient size to deliver a heavy blow without danger of breaking.

Moreover, Mr. Frank Hamilton Cushing, who has recently explored certain shell

deposits of the southwestern coast of Florida, and who was fortunate enough to find a number of these implements with handles in place, informs us that in his opinion our position in this matter is the correct one.

These perforated *Fulgurs* were probably in use as picks, hoes, chisels, and the like.

With a skeleton were three gouges of shell, and a similar implement was found loose in the sand.

A drinking cup of shell (*Fulgur per-versum*) lay loose in the sand.

Two shell pins were met with separately, and so far as could be determined, unassociated, though, in our opinion, they must have rolled from the neighborhood of some skeleton.

Three feet from the surface, with human remains and a bone implement, was a marine shell (*Murex spinicostata*).¹²

MISCELLANEOUS

A bone piercing implement, with a length of 6.5 inches, closely resembling the one to which reference has been made, was taken from a different portion of the mound.

A canine tooth of a large carnivore lay loose in the sand.

COPPER

Two very minute fragments of sheet copper, found separately, showed the former presence of this metal in the mound.

REMARKS

As we have stated, nothing that was necessarily the product of Europeans came from the Light-house mound, and when a mound of this size, containing so many skeletons, shows no contact with the Whites, it is justly regarded by archæologists as having a pre-Columbian origin.

ST. MARY'S RIVER

St. Mary's river, having its source in the Okefenokee swamp, enters Cumberland sound near the town of Fernandina, and serves as boundary between portions of Georgia and of Florida.

The stream, which hardly averages over 75 yards in breadth, a few miles distant

from the sea, is navigable for other than small boats to the second railroad bridge, a distance of about 30 miles by land, though probably double that distance by the river.

At first the river runs through marsh land, though farther up it is bordered by firm and at times high ground, mainly wooded with a thick growth of pine. The river is famous for the excellent quality of its water, and one would believe its banks to have been a chosen dwelling site for the aborigines.

The river was carefully searched by us on either side, all landings and settlements being visited, and diligent inquiry made, resulting in the conclusion that no mounds of importance, and an extremely limited number of any size, were present.

One small mound, partly dug through, was found on the Florida side on the property of Mr. Haddock, and another, about 2 feet in height, was seen at the "Brick Yard" a few miles east of King's Ferry. So well known along the river was this insignificant earthwork that it was evident that no mound of importance is

likely to have escaped our inquiries, made as they were at all points where habitations were apparent.

No shell-heaps were noticed on the banks.

Numbers of stones and fragments of rock proved to be ballast from timber schooners, and not indigenous to the territory.

NOTES

1. Mr. Douglass informs us that in his exploration of more than forty sand mounds on the east Florida coast, from the St. Johns river to Miami—a distance of 375 miles by water—he has never found an article of European manufacture.
2. "Some Characteristics of the Indian Earth and Shell Mounds on the Atlantic Coast of Florida," *The American Antiquarian*, March, 1885.
 "Earth and Shell Mounds on the Atlantic Coast of Florida," same journal, May, 1885.
 "A Find of Ceremonial Weapons in a Florida Mound, with Brief Notice of Other Mounds in that State." From the *Proceedings of the American Association for the Advancement of Science*, Vol. XXI.
3. Coquina, a formation of sand and minute shells and fragments of shells.
4. For figure and description see *American Naturalist*, August, 1893, page 716.

"Certain shell heaps of the St. Johns River, Fla., 4th paper."

5. There are two mounds on Spruce Creek. The one not referred to here is described by Mr. Douglass in the first part of his article, "Earth and Shell Mounds on the Atlantic Coast of Florida," *American Antiquarian*, May, 1885. Details of the Stone House, or Rock House mound, as it is variously called, are given in the same paper.
6. The reader is referred to "A Gold Ornament from Florida," by A. E. Douglass, *American Antiquarian*, January, 1890.
7. Sent to the United States Army Medical Museum, Washington, D. C.
8. This mound must not be confounded with the remains of a mound near the water works in the suburbs of the town.
9. July, 1893, page 613.
10. "Certain Sand Mounds of the St. Johns River, Florida," Part II, page 157, *Jour. Acad. Nat. Sci.*, Vol. X.
11. The Necropolis of Ancon. Reiss and Stübel, Berlin.
12. Determined by Professor H. A. Pilsbry, of the Academy of Natural Sciences.



F
313
M8

Moore, Clarence Bloomfield
Additional mounds of Duval
and of Clay counties, Florida

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